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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Jerry Prismantas

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DALLAS OFFICE OF FULBRIGHT & JAWORSKI L.L.P.
2200 ROSS AVENUE
SUITE 2800
DALLAS, TX 75201-2784

EXAMINER

MOORE JR, MICHAEL J

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 06/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

58

Office Action Summary	Application No. 09/843,621	Applicant(s) PRISMANTAS ET AL.	
	Examiner Michael J. Moore, Jr.	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-29,31-33 and 35-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-29,35 and 37 is/are allowed.
- 6) ☒ Claim(s) 1,3-19 and 31 is/are rejected.
- 7) ☒ Claim(s) 32,33 and 36 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Amendments made by Applicant to claims **33 and 35** to obviate the claim objections of the previous Office Action are proper and have been entered. These objections have been withdrawn.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.
2. Claims **14 and 15** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim **14** recites the limitation "said desired RF transmissions" in line 1. There is insufficient antecedent basis for this limitation in the claim. Also, claim **14** recites the limitation "said adjusting step" in line 2. There is insufficient antecedent basis for this limitation in the claim.
4. Claim **15** recites the limitation "said desired RF transmissions" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims **1, 3-19, and 31** are rejected under 35 U.S.C. 102(e) as being anticipated by Howard (U.S. 7,024,680). *Howard* teaches all of the limitations of the specified claims with the reasoning that follows.

Regarding claim **1**, “means for detecting repetitive RF interference which occurs during RF data transfer intervals” is anticipated by the RF Impairment Detector and Classifier 220 (means) of Figure 2 that identifies RF impairments on the upstream channel as spoken of on column 6, lines 26-31 and 59-67.

“Means, operative in response to periodicity and duration data obtained by the detecting means, for scheduling the RF data transfer during the intervals that avoid the interference” is anticipated by the system manager 222 and scheduler 218 (means) of Figure 2 that receives a report of periodic impulse/burst noise and avoids the interference by not scheduling any upstream transmissions during intervals where the interference is present as spoken of on column 13, lines 37-50.

Lastly, “means for determining the most efficient of scheduling the RF data transfer during the intervals that avoid the interference, and transmitting the RF data during the data transfer intervals and allowing forward error correction of a receiver to correct errors in the RF data transfer” is anticipated by the periodic impulse/burst noise (PIB) detection system (means) spoken of on column 11 line 62 – column 12, line 5, that uses the PIB pulse width as a factor to determine whether to apply forward error correction or to schedule around the interference.

Regarding claim **3**, "wherein the interference is a radar signal" is anticipated by the radar impulse train detection spoken of on column 13, lines 27-36.

Regarding claim **4**, "means for shifting a time sequence of the RF data transfer to avoid the interference" is anticipated by the system manager 222 and scheduler 218 (means) of Figure 2 that receives a report of periodic impulse/burst noise and avoids the interference by not scheduling any upstream transmissions during intervals (shift of time sequence) where the interference is present as spoken of on column 13, lines 37-50.

Regarding claim **5**, "wherein a modulation of the RF data transfer is changed to accommodate the time sequence shifting" is anticipated by the transmission with lower order of modulation as spoken of on column 13, lines 47-50.

Regarding claim **6**, "wherein a code rate of the RF data transfer is adjusted to accommodate the time sequence shifting" is anticipated by the transmission with higher forward error correction (FEC)/interleaving as spoken of on column 13, lines 47-50.

Regarding claim **7**, "means for skipping at least one time slot in a sequence of time slots of the data transfer to avoid the interference" is anticipated by the system manager 222 and scheduler 218 (means) of Figure 2 that receives a report of periodic impulse/burst noise and avoids the interference by not scheduling any upstream transmissions during intervals (time slots) where the interference is present as spoken of on column 13, lines 37-50.

Regarding claim **8**, "wherein a modulation of the RF data transfer is changed to accommodate the skipping at least one time slot" is anticipated by the transmission with lower order of modulation as spoken of on column 13, lines 47-50.

Regarding claim **9**, “wherein a code rate of the RF data transfer is adjusted to accommodate the skipping at least one time slot” is anticipated by the transmission with higher forward error correction (FEC)/interleaving as spoken of on column 13, lines 47-50.

Regarding claim **10**, “wherein the means for detecting is an antenna separate from antennas used to effect the RF data transfer” is anticipated by the RF Impairment Detector and Classifier 220 (means) of Figure 2 that identifies RF impairments on the upstream channel as spoken of on column 6, lines 26-31 and 59-67.

Regarding claim **11**, “wherein the antennas used to affect the RF data transfer are sectorized and are used to determine a direction of the interference” is anticipated by upstream demodulator 206 and downstream modulator 204 used for RF data transfer and reception from a plurality of cable modems.

Regarding claim **12**, “detecting interference using a filter”, “sweeping the filter across an RF band of interest”, and “calculating characteristics of RF interference within the RF band of interest to arrive at an interference profile of periodicity and discrete durations of the interference” is anticipated by the RF Impairment Detector and Classifier 220 (filter) of Figure 2 that identifies RF impairments (interference profile) on the upstream channel (RF band of interest) by examining FEC errors, FFT output data, and time sample data as spoken of on column 6, lines 26-31 and 59-67.

Lastly, “determining the most efficient of scheduling the RF data transfer during the intervals that avoid the interference, and transmitting the RF data during the data transfer intervals and allowing forward error correction of a receiver to correct errors in

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the RF data transfer” is anticipated by the periodic impulse/burst noise (PIB) detection system (means) spoken of on column 11 line 62 – column 12, line 5, that uses the PIB pulse width as a factor to determine whether to apply forward error correction or to schedule around the interference.

Regarding claim **13**, “wherein the filter is a narrow band filter” is anticipated by the RF Impairment Detector and Classifier 220 (narrow band filter) of Figure 2 that identifies RF impairments on the upstream channel by examining FEC errors, FFT output data, and time sample data as spoken of on column 6, lines 26-31 and 59-67.

Regarding claim **14**, “wherein the desired RF transmissions occur in sequential repetitive time slots and wherein the adjusting step includes the step of eliminating at least one of the time slots for the duration of the interference” is anticipated by the system manager 222 and scheduler 218 of Figure 2 that receives a report of periodic impulse/burst noise and avoids the interference by not scheduling any upstream transmissions during intervals (time slots) where the interference is present as spoken of on column 13, lines 37-50.

Regarding claim **15**, “wherein the desired RF transmissions are rescheduled for the duration of the interference” is anticipated by the system manager 222 and scheduler 218 of Figure 2 that receives a report of periodic impulse/burst noise and avoids the interference by not scheduling any upstream transmissions during intervals where the interference is present as spoken of on column 13, lines 37-50.

Regarding claim **16**, “wherein a modulation of the RF transmissions is changed to accommodate data in remaining ones of the time slots” is anticipated by the transmission with lower order of modulation as spoken of on column 13, lines 47-50.

Regarding claim **17**, “wherein a code rate of the RF data transfer is adjusted to accommodate remaining ones of the time slots” is anticipated by the transmission with higher forward error correction (FEC)/interleaving as spoken of on column 13, lines 47-50.

Regarding claim **18**, “wherein the RF interference is repetitive RF interference” is anticipated by the periodic impulse/burst noise spoken of on column 13, lines 37-41.

Regarding claim **19**, “wherein the repetitive RF interference is a radar signal” is anticipated by the radar impulse train detection spoken of on column 13, lines 27-36.

Regarding claim **31**, “wherein efficiency is based on one or more of payload, customer payload, and data payload” is anticipated by the periodic impulse/burst noise (PIB) detection system spoken of on column 11 line 62 – column 12, line 5, that uses the PIB pulse width (payload) as a factor to determine whether to apply forward error correction or to schedule around the interference.

Allowable Subject Matter

5. Claims **20-29, 35, and 37** are allowable over the prior art of record.
6. Claims **32, 33, and 36** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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7. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim **20**, *Howard* teaches RF Impairment Detector and Classifier 220 of Figure 2 that identifies RF impairments on the upstream channel as spoken of on column 6, lines 26-31 and 59-67.

Howard also teaches the system manager 222 and scheduler 218 of Figure 2 that receives a report of periodic impulse/burst noise and avoids the interference by not scheduling any upstream transmissions during intervals where the interference is present as spoken of on column 13, lines 37-50.

Howard also teaches the scheduling of lower priority transmissions during the intervals of expected interference on column 13, lines 37-50.

Howard does not teach determining the most efficient of: rescheduling transmissions to avoid the interference, and transmitting the RF data and resending the RF data sent during the interference.

Regarding claims **21-29, 35, and 37**, these claims are further limiting to claim **20** and are thus also allowable over the prior art of record.

Regarding claim **32**, *Howard* teaches the method of claim **12**. *Howard* does not teach determining the most efficient of: adjusting time sequences of desired RF transmissions to accommodate the interference profile, allowing forward error correction of a receiver to correct errors in the RF data transfer, and resending the RF data sent during the interference.

Regarding claim **33**, this claim is further limiting to claim **32** and is thus also allowable over the prior art of record.

Regarding claim **36**, *Howard* teaches the system of claim **1**. *Howard* does not teach determining whether transmitting the RF data during the transfer intervals and resending RF data sent during the RF interference is more efficient than the scheduling of the RF data transfer during the intervals that avoid the interference, and the transmitting of the RF data during the data transfer intervals and allowing of forward error correction of a receiver to correct errors in the RF data transfer.

Response to Arguments

8. Applicant's arguments with respect to claims **12-19** have been considered but are moot in view of the new ground(s) of rejection provided above.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McDonald et al. (U.S. 6,301,306) is another reference considered pertinent to this application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Moore, Jr. whose telephone number is (571) 272-3168. The examiner can normally be reached on Monday-Friday (8:00am - 4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached at (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael J. Moore, Jr.
Examiner
Art Unit 2616

mjm MM

Seema S. Rao
SEEMA S. RAO 6/19/06
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600